

What is claimed is:

1. A method by which a radio receiver (10), in receiving a signal transmitted over a radio channel, estimates the impulse response of the radio channel based on a received training sequence (Y) included in the received signal, the method

5 including a step (102) of performing a plurality of correlations of a correlation sequence ( $Y_c''$ ) derived from the received training sequence (Y) with a replica ( $X_0$ ) of the transmitted correlation sequence, characterized by a step

10 (101) of calculating the received correlation sequence ( $Y_c''$ ) derived from the received signal based on averaging symbols of the received training sequence (Y).

2. A method for estimating the impulse response ( $c(t)$ ) of a radio channel by which a radio receiver (10) receives a

15 received signal including a received training sequence (Y) for which the radio receiver (10) knows a corresponding replica training sequence ( $X_0$ ), the received training sequence (Y) including a correlation sequence ( $Y_c$ ) having a first end and a

20 second end, and also including an additional part ( $Y_{a2}$ ) at the second end, with the additional part ( $Y_{a2}$ ) the same as a corresponding portion ( $Y_{c1}$ ) of the correlation sequence ( $Y_c$ ) at the first end of the received correlation sequence ( $Y_c$ ), and likewise for the replica training sequence ( $X_0$ ) so that it includes a replica correlation sequence ( $X_{0,c}$ ), the method

25 characterized by:

a) a sequence-calculating step (101), responsive to the received training sequence (Y), of forming a calculated correlation sequence ( $Y_c''$ ) by averaging a predetermined number of symbols ( $Y_{c1}$ ) from the first end of the received

30 correlation sequence ( $Y_c$ ) with a predetermined number of corresponding symbols from the additional part ( $Y_{a2}$ ) at the second end of the received training sequence (Y); and

b) a correlating step (102), responsive to the calculated correlation sequence ( $Y_c''$ ), of performing a set of correlations of the calculated correlation sequence ( $Y_c''$ ) with the replica training sequence ( $X_0$ ), the set of correlations including a first correlation in which the calculated correlation sequence ( $Y_c''$ ) is aligned with the replica correlation sequence ( $X_{0,c}$ ) and including subsequent correlations performed with the calculated correlation sequence ( $Y_c''$ ) shifted for each next correlation by one or more symbols from the position in the immediately preceding correlation, so as to provide information useful in estimating the channel impulse response ( $c(t)$ ).

3. A receiver (10), characterized in that it is operative according to the method of claim 1.

4. A receiver (10), characterized in that it is operative according to the method of claim 2.

5. A telecommunication system, including a base transceiver station and a user equipment, both of which include a receiver (10), characterized in that both receivers (10) are operative according to the method of claim 1.

6. A telecommunication system, including a base transceiver station and a user equipment, both of which include a receiver (10), characterized in that both receivers (10) are operative according to the method of claim 2.

7. A computer program product comprising: a computer readable storage structure embodying computer program code thereon for execution by a computer processor in a receiver (10), with said computer program code characterized in that it includes instructions for performing steps of a method according to claim 1.

8. A computer program product comprising: a computer readable storage structure embodying computer program code thereon for execution by a computer processor in a receiver (10), with said computer program code characterized in that it includes  
5 instructions for performing the steps of a method according to claim 2.